TECHNICAL SCHEDULE III

Instrumentation, Control&Automation Equipment's for STP

3.1 Instrumentation & Control Equipment's

Note: The bidder shall provide complete information along with product brochures in the schedule as required under the bid specifications for technical qualification**.**

Sr. No.	**Description**	**Unit**	**Particulars**
3.1.1	**Level Measuring System**		
(a)	Ultrasonic / Radar Type Make and Model Beam Angle Country of Origin		
(b)	Capacitance Type Make and Model Country of Origin		
(c)	Conductivity Type Make and Model No. of electrode Country of Origin		
(d)	Float type Level Gauge Make and Model Float Material Country of Origin		
3.1.2	**Digital Level Display Unit**		
(a) (b)	Make and Model Country of Origin		

Sr. No.	**Description**	**Unit**	**Particulars**
3.1.3	**Pressure Gauges**		
(a)	Make and Model		
(b)	Range	kg/cm^2	
(c)	Country of Origin		
3.1.4	**Pressure Transmitter with local indication**		
(a)	Make and Model		
(b)	Range	kg/cm^2	
(c)	Country of Origin		
3.1.5	**Digital Pressure Indicator**		
(a)	Make and Model		
(b)	Repeat Transmission output		
(c)	Country of Origin		
3.1.6	**Pressure Switches**		
(a)	Range		
(b)	Make and Model		
(c)	Country of Origin		
3.1.7	**Flow Measuring System**		
(a)	**Electromagnetic Flowmeter** Make and Model		
	Accuracy		

Sr. No.	**Description**	**Unit**	**Particulars**
	Flow integrator and display unit Make and Model Country of Origin		
(b)	**Thermal Mass Flowmeter** Make and Model Accuracy Flow integrator and Display Unit Country of Origin		
(c)	**Open Channel Flow Measuring System** Make / Model Type Quantity Accuracy Country of Origin		

Sr. No.	**Description**	**Unit**	**Particulars**
3.1.8	**Weight Indicator cum Transmitter** Make / Model Type Quantity Accuracy Country of Origin		
3.1.9	**Instrument Junction Boxes** Make and Model Instrument enclosures Country of Origin		
3.1.10	**Instrument Enclosures** Make and Model Instrument enclosures Country of Origin		
3.1.11	**Local Push button Station** Make and Model Country of Origin		

Sr. No.	**Description**	**Unit**	**Particulars**
3.1.12	**Control & Automation System:** **(Hot Standby CPU) Programmable Logic Controller For each STP**		
(a)	Make and Model: Hot standby Offered at STP: Country of Origin:		
(b)	(i) Digital Inputs (ii) Model No (iii) Type (iv) Country of origin (v) Series similar to CPU.	Nos.	
(c)	(i) Digital outputs (ii) Model No (iii) Type (iv) Country of origin (v) Series similar to CPU.	Nos.	
(d)	(i) Analog Inputs (ii) Model No (iii) Type (iv) Country of origin (v) Series similar to CPU.	Nos.	

Sr. No.	**Description**	**Unit**	**Particulars**
(e)	(i) Analog outputs (ii) Model No (iii) Type (iv) Country of origin (v) Series similar to CPU.	Nos.	
3.1.13	**Memory**		
3.1.14	**Redundant Power Supply Modules,** (i) Make (ii)Model No (iii) Country of Origin		
3.1.15	**Communication Modules** (i) Make (ii) Model No (iii) Country of Origin		

Sr. No.	**Description**	**Unit**	**Particulars**
3.1.16	Portable Industrial Programming Unit (Laptop-16” screen) loaded with licensed latest Windows operating system, PLC programming software & SCADA software, MS Office, Antivirus software, with all accessories required to connect to PLC and to monitor &control the plant if required, etc)		
3.1.17	Interface/ integrationRedundant GPRScommunication equipment,CP-024 & MIS-2 contracts (i) Make & Model: (ii) Country of Origin: (iii) Redundancy offered:		
3.1.18	**HMI (Minimum 16”) for PLC & RIO Panels**		
(a)	Software Details: Version No:		

Sr. No.	**Description**	**Unit**	**Particulars**
(b)	Hardware Details (i) CPU Configuration (ii) Make /Model (iii) Touch Screen Color (iv) Monitor Configuration (v) Country of Origin		
(c)	Printers (inclusive of All in one printer) - OFFLINE - ONLINE - Country of Origin	Nos	

Sr. No.	**Description**	**Unit**	**Particulars**
3.1.19	**SCADA &Historian Software Packages** SCADA software: Version: Country of Origin: Historian Software: Version: Country of Origin: PLC Programming Software: Version: FBD Supported & Included: Make & Origin(Contractor shall name Make & Origin without fail)		
3.1.20	SCADA Server Hardware Details CPU Configuration Make /Model Monitor size Monitor make Make Country of origin		

Sr. No.	**Description**	**Unit**	**Particulars**
3.1.21	SCADA clients/Operator machines Hardware Details (i) CPU Configuration (ii) Make /Model (i) Monitor size (ii) Monitor make (iv) Country of Origin		
3.1.22	MIS Software: (i) Make: (ii) Country of Origin:		
3.1.23	SCADA System Console (i) Make (i) Model (ii) Country of Origin		
3.1.24	**Large screen display, 55" in array of 2x3 configuration** Make and Model:		
	Dimension/Size:		
	Video switcher /Controller Considered:		
	Country of Origin:		

Sr. No.	**Description**	**Unit**	**Particulars**
3.1.25	**Temperature Scanner**		
	Make and Model		
	Accuracy		
	No. of Channels		
	Country of Origin		
	Number of alarm contacts per channel		
3.1.26 (a)	**Temperature Guage** Make and Model		
(b)	Accuracy		
(c)	Country of Origin		
3.1.27 (a)	**Temperature Transmitter** Make and Model		
(b)	Accuracy		
(c)	Type		
(d)	Country of Origin		
3.1.28	**Ethernet Managed Switch** **Printers** (i) Make /Model (ii) No of Ports (iii) Country of Origin		

Sr. No.	**Description**	**Unit**	**Particulars**
3.1.29	**CCTV Workstation Details** (i) CPU Configuration (ii) Make /Model (iii) Monitor make (iv) Monitor Size (iv) Country of Origin		
3.1.30	**Uninterruptable Power Supply for STP** Make and Model		
	Capacity		
	Backup time considered for STP. Indicate separately for each.		
	No of batteries		
	Country of Origin:		
3.1.31	**Surge Protection Devices**		
(a) (b) (c)	Surge Rating Make/Model Country of Origin:	kA	

Sr. No.	Description	Unit	Particulars
3.1.32	**Instrumentation and Control Cables**		
(a)	Make		
(b)	No of Cores		
	Type		
(c)	Country of Origin		
(d)	Armoured cables are considered:		
(e)			
3.1.33	**Cable trays** Make: Type: Country of Origin:		
3.1.34	**Instrument Enclosures** Make: IP Rating : Country of Origin:		
3.1.35	**Fire alarm detection & Suppression system** (a) Make & model: (b) Country of Origin:		
3.1.36	**AC distribution board for Instrumentation & Control and Telemetry System**		
(a)	Make and Model		

Sr. No.	**Description**	**Unit**	**Particulars**
(b)	Pre-fabricated		
(c)	Country of Origin		
3.1.37	**Lab Instruments** Make and model (List all lab equipment with make & model) LIMS software: Make and model: Confirm LIMS software connected to SCADA system: Country of Origin		
3.1.38	**All Weather Refrigerated Auto Sampler** Make and model Technical Details Country of Origin		
3.1.39	**Online Real Time Water Quality Systems at Inlet & Outlet of STP** Make and model Technical Details Country of Origin		
3.1.40	**Online Analytical Instrumentation**		

Sr. No.	**Description**	**Unit**	**Particulars**
(a)	**Turbidity Measurement system** Make and model Technical Details Country of Origin		
(b)	**pH Measurement system** Make and model Technical Details Country of Origin		
(c)	**Chlorine Measurement system** Make and model Technical Details Country of Origin		
(d)	**Dissolved Oxygen Measurement system** Make and model Technical Details Country of Origin		
(e)	**Suspended Solids Measurement system** Make and model Technical Details Country of Origin		

Sr. No.	**Description**	**Unit**	**Particulars**
(f)	**TDS Measurement system** Make and model Technical Details Country of Origin		
(g)	**ORP Measurement system** Make and model Technical Details Country of Origin		
3.1.41	**CCTV SURVILLANCE SYSTEMS:** Make: Model: Country of Origin: TECHNICAL DETAILS:		

Instrumentation, Control& Automation Equipment's for ISPSs(Deleted)

3.1 Instrumentation & Control Equipment's

Sr. No.	Description	Unit	Particulars
3.2.1	**Level Measuring System**		
(a)	**Ultrasonic Type** Make and Model Beam Angle Country of Origin		
(b)	**Capacitance Type** Make and Model Country of Origin		
(c)	**Conductivity Type** Make and Model No. of electrode Country of Origin		
(d)	**Float type Level Gauge** Make and Model Float Material Country of Origin		
3.2.2	**Digital Level Display Unit**		

Sr. No.	**Description**	**Unit**	**Particulars**
	Make and Model Country of Origin		
3.2.3	**Pressure Gauges**		
	Make and Model		
	Range Country of Origin	kg/cm^2	
3.2.4	**Pressure Transmitter** Make and Model		
	Range Country of Origin	kg/cm^2	
3.2.5	**Digital Pressure Indicator**		
	Make and Model Repeat Transmission output Country of Origin		
3.2.6	**Pressure Switches**		
	Make and Model Country of Origin		
3.2.7	**Flow Measuring System**		
(a)	**Electromagnetic Flowmeter** Make and Model Accuracy		

Sr. No.	**Description**	**Unit**	**Particulars**
	Country of Origin		
(b)	**Flow integrator and display unit** Make and Model Country of Origin		
3.2.8	**Instrument Junction Boxes** Make and Model Country of Origin		
3.2.9	**Local Push button Station** Make and Model Country of Origin		
3.2.10	**Control & Automation System:** **(Standalone) Programmable Logic ControllerISPSs**		
(a)	**Make and Model:** Standalone at ISPS: Country of Origin:		

Sr. No.	**Description**	**Unit**	**Particulars**
(b)	(i) Digital Inputs (ii) Model No (iii) Type (iv) Country of origin (v) Series similar to CPU.	Nos.	
(c)	(i) Digital Outputs (ii) Model No (iii) Type (iv) Country of origin (v) Series similar to CPU.	Nos.	
(d)	(i) Analog Inputs (ii) Model No (iii) Type (iv) Country of origin (v) Series similar to CPU.	Nos.	
(e)	(i) AnalogOutputs (ii) Model No (iii) Type (iv) Country of origin (v) Series similar to CPU.	Nos.	
(f)	**Memory**		

Sr. No.	Description	Unit	Particulars
(g)	**Redundant Power Supply Modules,** (i) Make (ii)Model No (iii) Country of Origin		
(h)	**CPU, Communication Modules** (i) Make (ii) Model No (iii) Country of Origin		
(i)	**Interface/integration Redundant GPRS communication equipment with STPs,CP-024 & MIS-2 contracts** (i) Make & Model: (ii) Country of Origin: (III) Redundancy offered:		
3.2.11	**HMI (Minimum 16”) for PLC & RIO Panels**		
	Software Details: Version No: Country of Origin		

Sr. No.	**Description**	**Unit**	**Particulars**
	Hardware Details CPU Configuration Make /Model Monitor Configuration Country of Origin		
3.2.12	**Ethernet Managed Switch** **Printers** Make /Model No of Ports Country of Origin		
3.2.13	**Uninterruptable Power Supply** Make and Model		
	Capacity		
	Backup time considered		
	No of batteries		
	Country of Origin:		
3.2.14	**Surge Protection Devices** Surge Rating Make/Model Country of Origin	kA	

Sr. No.	**Description**	**Unit**	**Particulars**
3.2.15	**Instrumentation and Control Cables** Make No of Cores Type Country of Origin Armoured cables are considered:		
3.2.16	**Cable trays** Make: Type: Country of Origin		
3.2.17	**Instrument Enclosures** Make: IP Rating : Country of Origin		
3.2.18	**Fire Detection and alarm system with Suppression system** Make & model: Country of Origin		

Sr. No.	**Description**	**Unit**	**Particulars**
3.2.19	**Air Cooled split Air Conditioner complete with IDU and ODU** Make and Model Country of Origin		
3.2.20	**AC distribution board for Instrumentation & Control and Telemetry System** Make and Model Pre-fabricated Country of Origin		
3.2.21	**CCTV SURVILLANCE SYSTEMS:** Make: Model: Country of Origin: Technical Details:		